UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,416	05/04/2004	James Zu-Chia Teng	SVL920040010US1	3415

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ART UNIT	PAPER NUMBER
2168	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/27/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/709,416	TENG ET AL.
	Examiner	Art Unit	
	Dangelino N. Gortayo	2168	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 May 2004</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>04 May 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>5/4/04 4/22/05</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1-21 are pending in this application.

Information Disclosure Statement

2.   The information disclosure statement (IDS) submitted on 5/4/2004 and 4/22/2005

are in compliance with the provisions of 37 CFR 1.97 and have been considered by the

examiner.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claims 2-11 and 13-18 are rejected under 35 U.S.C. 112, second paragraph, as

being indefinite for failing to particularly point out and distinctly claim the subject matter

which applicant regards as the invention.

Claims 2-11 recites the limitation "A method for controlling concurrent access" in

line 1. There is insufficient antecedent basis for this limitation in the claim.

Claims 13-18 recites the limitation "An article of manufacture" in line 1. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-3, 5, 12-14, and 19-21 are rejected under 35 U.S.C. 102(b) as being

anticipated by Bray et al. (US Patent 6,529,905 B1).

As per claim 1, Bray teaches "A method for controlling concurrent access of

prefix encoded nodes in a hierarchically structured document" (see Abstract)

"comprising steps of: a. processing an explicit lock request on a node by

determining ancestor nodes from said node," (Figure 6 and column 8 lines 24-34,

wherein a lock is requested to be created and the parent of a target node are identified)

"b. deriving implicitly from said explicit lock request, a set of locks for said

determined ancestor nodes," (column 6 line 60 – column 7 line 12, wherein locks for the

subnodes and the parent of a target are found)

"c. comparing said derived set of implicit locks with existing lock modes for said

determined ancestor nodes," (column 5 line 62 – column 6 line 4, wherein the locks on

the parents are determined)

"and d. granting or denying said explicit lock request on said node based on

results of said comparing step." (column 7 lines 20-50, wherein if a lock is found on the

parent or child nodes, the lock request is denied)

As per claim 2, Bray teaches "said hierarchically structured document is an XML

document." (column 5 lines 4-18)

As per claim 3, <u>Bray</u> teaches "said node is comprised of data and a node identifier (ID)." (column 5 lines 19-32)

As per claim 5, <u>Bray</u> teaches "granting said explicit lock request, one or more of said implicitly derived locks are implicitly applied to said ancestor nodes." (column 8 lines 1-13)

As per claim 12, <u>Bray</u> teaches "An article of manufacture comprising a computer usable medium having computer readable program code embodied therein which implements concurrent access control of prefix encoded nodes in a hierarchically structured document" (see Abstract)

"comprising modules implementing code for: a. processing an explicit lock request on a node by determining ancestors nodes from said node," (Figure 6 and column 8 lines 24-34, wherein a lock is requested to be created and the parent of a target node are identified)

"b. deriving from said explicit lock request, a set of implicit locks for said determined ancestor nodes," (column 6 line 60 – column 7 line 12, wherein locks for the subnodes and the parent of a target are found)

"c. comparing said derived set of implicit locks with existing lock modes for said determined ancestor nodes," (column 5 line 62 – column 6 line 4, wherein the locks on the parents are determined)

"and granting or denying said explicit lock request on said node based on results of said comparing step." (column 7 lines 20-50, wherein if a lock is found on the parent or child nodes, the lock request is denied)

As per claim 13, <u>Bray</u> teaches "said hierarchically structured document is an XML document." (column 5 lines 4-18)

As per claim 14, <u>Bray</u> teaches "said node is comprised of data and a node identifier (ID)." (column 8 lines 1-13)

As per claim 19, <u>Bray</u> teaches "A system for controlling concurrent access of prefix encoded nodes in a hierarchically structured document" (see Abstract)

"comprising: a. a processor receiving as input, an explicit lock request on a node and providing as output ancestors nodes determined from said node," (Figure 6 and column 8 lines 24-34, wherein a lock is requested to be created and the parent of a target node are identified)

"b. a converter receiving as input said explicit lock request and deriving as output a set of implicit locks for said output ancestor nodes," (column 6 line 60 – column 7 line 12, wherein locks for the subnodes and the parent of a target are found)

"c. a comparator comparing said derived set of implicit locks with existing lock modes for said output ancestor nodes," (column 5 line 62 – column 6 line 4, wherein the locks on the parents are determined)

"and a lock request grantor, granting or denying said explicit lock request on said node based on output of said comparator." (column 7 lines 20-50, wherein if a lock is found on the parent or child nodes, the lock request is denied)

As per claim 20, <u>Bray</u> teaches "A method for controlling concurrent access of prefix encoded nodes in a hierarchically structured document" (see Abstract)

"comprising steps of: a. processing an explicit lock release on a node by determining ancestors nodes from said node; said explicit lock release requested by a transaction;" (Figure 6 and column 8 lines 24-34, wherein a lock is requested to be created and the parent of a target node are identified)

"b. deriving from said explicit lock release, a set of implicit lock modes for said determined ancestor nodes," (column 6 line 60 – column 7 line 12, wherein locks for the subnodes and the parent of a target are found)

"and c. releasing locks on determined ancestor nodes corresponding to said derived implicit lock mode; said locks on determined ancestor nodes originally requested by said transaction." (column 8 line 63 – column 9 line 5, wherein the locks are released once the process is complete)

As per claim 21, <u>Bray</u> teaches "An article of manufacture comprising a computer usable medium having computer readable program code embodied therein which implements concurrent access control of prefix encoded nodes in a hierarchically structured document" (see Abstract)

"comprising modules executing: a. explicit lock request processing on a node by determining ancestor nodes from said node," (Figure 6 and column 8 lines 24-34, wherein a lock is requested to be created and the parent of a target node are identified)

"b. implicit derivation of a set of locks for said determined ancestor nodes from said explicit lock request," (column 6 line 60 – column 7 line 12, wherein locks for the subnodes and the parent of a target are found)

"c. a comparison of said derived set of implicit locks with existing lock modes for said determined ancestor nodes," (column 5 line 62 – column 6 line 4, wherein the locks on the parents are determined)

"and d. granting or denying said explicit lock request on said node based on results of said comparing step." (column 7 lines 20-50, wherein if a lock is found on the parent or child nodes, the lock request is denied)

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 4-11 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over <u>Bray</u> et al. (US Patent 6,529,905 B1) in view of <u>Sadjadi</u> (US Patent 6,850,938)

As per claim 4, <u>Bray</u> is disclosed as per claim 1 above. <u>Bray</u> does not teach

"said explicit lock mode is any of: a shared (S), update (U), or exclusive (X) lock mode."

<u>Sadjadi</u> teaches "said explicit lock mode is any of: a shared (S), update (U), or exclusive

(X) lock mode." (column 7 lines 4-33, wherein a lock manager can use different lock

types 'S' for shared, 'E' for exclusive, and 'O' for optimistic).

It would have been obvious for one of ordinary skill in the art to combine <u>Bray</u>'s

method of locking elements of a hierarchal data structure using parent and child nodes

with <u>Sadjadi</u>'s method of a lock for computer resource objects being of types shared,

exclusive, and optimistic mode. This gives the user the advantage of being able to

control more specifically the lock management of a hierarchal data structure by adding

fine granularity to lock management. The motivation for doing so would be to reduce the

time and computational cost of lock management (column 3 lines 26-54).

As per claim 6, <u>Sadjadi</u> teaches "said implicitly derived lock mode is any of: an

intention-shared (IS), intention-exclusive (IX), or a shared, intention-exclusive lock (SIX)

mode." (column 9 lines 14-43 and Table 1)

As per claim 7, <u>Sadjadi</u> teaches "a. an explicit lock request on said node in lock

mode S implicitly derives a set of locks in IS mode," (column 10 lines 22-31)

"b. an explicit lock request on said node in lock mode X implicitly derives a set of

locks in IX mode," (column 10 lines 32-40)

"c. an explicit lock request on said node in lock mode IS implicitly derives a set of

locks in IS mode," (column 10 lines 41-50)

"d. an explicit lock request on said node in lock mode IX implicitly derives a set of locks in IX mode," (column 10 lines 51-61)

"and e. an explicit lock request on said node in lock mode SIX implicitly derives a set of locks in SIX mode." (column 11 lines 24-32)

As per claim 8, Sadjadi teaches "said lock request is denied if said comparison step results in incompatibility and granted otherwise;" (column 11 lines 46-56)

"said comparison step results in compatibility between said existing and derived lock modes if lock request mode for said node is: a. IS and said ancestor nodes are locked in any existing mode of: IS, IX, S, or SIX," (Table 2 and column 12 lines 10-19)

"b. IX and said ancestor nodes are locked in either existing mode of: IS or IX," (column 12 lines 39-45)

"c. S and said ancestor nodes are locked in either existing mode of: IS or S," (column 12 lines 46-58)

"d. SIX and said ancestor nodes are locked in existing mode of IS," (column 12 line 59 – column 13 line 6)

"and e. X and said ancestor nodes are not currently locked;" (column 13 lines 7-16, lines 26-33)

"and said comparison step results in incompatibility between said existing and derived lock modes, otherwise." (column 13 lines 17-25)

As per claim 9, Bray teaches "said comparing step is facilitated by a logical data structure indicating existing lock information for each node; said logical data structure comprising logical lock tree nodes." (Figure 3, 4 and column 4 lines 53-66)

As per claim 10, <u>Bray</u> teaches "said logical lock tree nodes are comprised of at least: a node ID field, a transaction ID field, and a lock mode field." (column 5 lines 33-44)

As per claim 11, <u>Bray</u> teaches "granting a lock request, a logical lock tree node for said node is created and ID of said node is inserted into said logical lock tree node ID field, a transaction ID is inserted into said logical lock tree node transaction ID field, a lock mode is inserted into said logical lock tree node lock mode field;" (column 5 lines 45-61)

"and if logical lock tree nodes exist for said ancestor nodes, adding either one or both of: a transaction ID to said logical lock tree node transaction ID fields and adding said lock mode to said logical lock tree node lock mode fields;" (column 8 lines 24-59)

"else creating logical lock tree nodes for said ancestor nodes, inserting IDs of said ancestor nodes into said logical lock tree node ID fields, inserting a transaction ID into said logical lock tree node transaction ID fields, and inserting a lock mode into said logical lock tree node lock mode fields." (column 9 lines 8-47)

As per claim 15, <u>Bray</u> is disclosed as per claim 1 above. <u>Bray</u> does not teach "said explicit lock mode is any of: a shared (S), update (U), or exclusive (X) lock mode." <u>Sadjadi</u> teaches "said explicit lock mode is any of: a shared (S), update (U), or exclusive (X) lock mode." (column 7 lines 4-33, wherein a lock manager can use different lock types 'S' for shared, 'E' for exclusive, and 'O' for optimistic).

It would have been obvious for one of ordinary skill in the art to combine <u>Bray</u>'s method of locking elements of a hierarchal data structure using parent and child nodes with <u>Sadjadi</u>'s method of a lock for computer resource objects being of types shared, exclusive, and optimistic mode. This gives the user the advantage of being able to control more specifically the lock management of a hierarchal data structure by adding fine granularity to lock management. The motivation for doing so would be to reduce the time and computational cost of lock management (column 3 lines 26-54).

As per claim 16, <u>Sadjadi</u> teaches "said implicitly derived lock mode is any of: an intention-shared (IS), intention-exclusive (IX), or a shared, intention-exclusive lock (SIX) mode." (column 9 lines 14-43 and Table 1)

As per claim 17, <u>Sadjadi</u> teaches "a. an explicit lock request on said node in lock mode S implicitly derives a set of locks in IS mode," (column 10 lines 22-31)

"b. an explicit lock request on said node in lock mode X implicitly derives a set of locks in IX mode," (column 10 lines 32-40)

"c. an explicit lock request on said node in lock mode IS implicitly derives a set of locks in IS mode," (column 10 lines 41-50)

"d. an explicit lock request on said node in lock mode IX implicitly derives a set of locks in IX mode," (column 10 lines 51-61)

"and e. an explicit lock request on said node in lock mode SIX implicitly derives a set of locks in SIX mode." (column 11 lines 24-32)

As per claim 18, <u>Sadjadi</u> teaches "said comparison step results in compatibility between said existing and derived lock modes if lock request mode for said node is: a.

IS and said ancestor nodes are locked in any existing mode of: IS, IX, S, or SIX," (Table

2 and column 12 lines 10-19)

"b. IX and said ancestor nodes are locked in either existing mode of: IS or IX,"

(column 12 lines 39-45)

"c. S and said ancestor nodes are locked in either existing mode of: IS or S,"

(column 12 lines 46-58)

"d. SIX and said ancestor nodes are locked in existing mode of IS," (column 12

line 59 – column 13 line 6)

"and e. X and said ancestor nodes are not currently locked;" (column 13 lines 7-

16, lines 26-33)

"otherwise, said comparison step results in incompatibility between said existing

and derived lock modes." (column 13 lines 17-25)

Conclusion

9.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

Goldick (US Patent 6,748,470 B2)

Stegelmann (US Patent 6,772,155 B1)

Daynes (US Patent 6,910,039 B2)

Bailey et al. (US Publication 2005/0234989 A1)

10.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dangelino N. Gortayo whose telephone number is (571)272-7204. The examiner can normally be reached on M-F 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim T. Vo can be reached on (571)272-3642. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dangelino N. Gortayo   Tim T. Vo
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